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ERSO-87-076C

April 30, 2004

To: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Fr: George O. Saile, Reg. No. 19,572
28 Davis Avenue
Poughkeepsie, N.Y. 12603

Subject: Serial No. 10/812,735 03/30/04

Lai-Juh Chen

CHEMICAL MECHANICAL POLISH PROCESS CONTROL METHOD USING THERMAL IMAGING OF POLISHING PAD

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation In An Application.

The following Patents and/or Publications are submitted to comply with the duty of disclosure under CFR 1.97-1.99 and 37 CFR 1.56.

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on May 4, 2004.

Stephen B. Ackerman, Reg.# 37761

Signature/Date Stephen B. Ackerman 5/4/04

U.S. Patent 5,647,952 to Chen, "Chemical/Mechanical Polish (CMP) Endpoint Method," describes a method for endpoint detection in CMP in which infrared detection is used to measure the temperature of a selected polishing pad location which is abrading the surface of the semiconductor substrate.

U.S. Patent 5,234,868 to Cote, "Method for Determining Planarization Endpoint during Chemical-Mechanical Polishing," describes a monitor structure surrounded by a moat.

U.S. Patent 5,240,552 to Yu et al., "Chemical Mechanical Planarization (CMP) of a Semiconductor Wafer using Acoustical Waves for In-Situ End Point Detection," directs acoustical waves at the wafer during CMP and through analysis of the reflected wave form controls the planarization process.

U.S. Patent 5,308,438 to Cote et al., "Endpoint Detection Apparatus and Method for Chemical/Mechanical Polishing," describes an endpoint detection method in which the power required to maintain a set rotational speed in a motor rotating the substrate is monitored.

U.S. Patent 5,337,015 to Lustig et al., "In-Situ Endpoint Detection Method and Apparatus for Chemical-Mechanical Polishing using Low Amplitude Input Voltage," utilizes electrodes built into the polishing pad, and a high frequency, low voltage signal, and detection means as a method for measuring the thickness of a dielectric layer being polished.

U.S. Patent 5,413,941 to Koos et al., "Optical End Point Detection Methods in Semiconductor Planarizing Polishing Processes," describes a method for endpoint detection for polishing by impinging laser light onto the substrate being polished and measuring the reflected light.

U.S. Patent 5,196,353 to Sandhu et al., "Method for Controlling a Semiconductor (CMP) Process by Measuring a Surface Temperature and Developing a Thermal Image of the Wafer," describes the use of infrared radiation detection to measure the surface temperature of a semiconductor wafer during a polishing process.

Sincerely,

Stephen B. Ackerman,
Reg. No. 37761

Sheet 1 of 1

Form PTO-1449

INFORMATION DISCLOSURE CITATION IN AN APPLICATION

(Use several sheets if necessary)

Docket Number (Optional)	Application Number
ERSO-87-076C	10/812,735
Applicant: Lai-Juh Chen	
Filing Date: 03/30/04	Group Art Unit:

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
	5647952	7/15/97	Chen	156	636.1	4/1/96
	5196353	3/23/93	Sandhu et al.	437	8	1/3/92
	5413941	5/9/95	Koos et al.	437	8	1/6/94
	5337015	8/9/94	Lustig et al.	324	671	6/14/93
	5308438	5/3/94	Cote et al.	156	636	1/30/92
	5240552	8/31/93	Yu et al.	156	636	12/11/91
	5234868	8/10/93	Cote	437	225	10/29/92

FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	Translation YES	Translation NO

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

EXAMINER	DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP § 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the applicant.